ALAMEDA COUNTY CONGESTION MANAGEMENT AGENCY
RFQ 2003-03
For On-Call Traffic Engineering Services
For Projects on the State Highway System

TASK 1 - DRAFT SCOPE OF WORK

Traffic Operations Study for the Proposed Southbound Ramps at 10th Avenue on I-880

Alameda County Congestion Management Agency (ACCMA), the City of Oakland, Port of Oakland and Caltrans has embarked on a joint effort to define a project to relocate the existing southbound off ramp and on ramp. Caltrans has agreed to take the lead in preparing a Project Study Report (PSR) that will define geometric alternatives and scope a potential project. The ACCMA has agreed to provide Caltrans technical assistance and support for the development of the PSR.

The following scope of work has been prepared for the preparation of a Traffic Operations Study to evaluate future traffic (20-Year horizon) conditions associated with the proposed relocation and consolidation of existing isolated on- and off-ramps at 10th and 16th Avenue, respectively, into a hook on- and off-ramp partial interchange in the vicinity of 10th Avenue. The purpose of the Traffic Operations Study is to provide the necessary technical data for the preparation of a Project Study Report that demonstrates an overall freeway operational improvement over existing conditions. The traffic analysis will also be used to prepare a Request to FHWA Conceptual Approval Report to secure FHWA approval to change freeway access and modify ramp geometry on I-880.

Task 1 – Initial Consultation with Caltrans

Prior to commencement of Data Collection task, Consultant shall prepare for and participate in an initial consultation meeting with Caltrans' functional units to clarify and/or reaffirm the methodology used in traffic forecasts and operations analysis outlined in the Scope of Work. This meeting shall be conducted through arrangement made by the ACCMA through Caltrans Office of Advance Planning.

Task 2 – Data Collection

AM and PM peak hour turning movement traffic counts shall be conducted at the following study intersections:

Embarcadero/5th Avenue
Embarcadero/I-880 NB 5th Avenue off-ramp
Embarcadero/I-880 SB 10th Avenue off-ramp
Embarcadero/ I-880 SB 16th Avenue off-ramp

Oak Street/I-880 SB on-ramp intersection
Embarcadero/16th Avenue intersection

Existing AM and PM peak hour traffic volumes for I-880 mainline freeway and ramps between Oak Street and 23rd Avenue are also required. Caltrans is currently planning a major seismic upgrade of the 5th Avenue overhead structure on I-880. The current non-standard lane and shoulder widths will be widened to meet current design standards as part of the seismic upgrade project. Five lanes including an auxiliary lane will be provided for the southbound traffic. Existing traffic data may be available from the current Caltrans project.

Since Caltrans Census Unit may not have control station mainline count within the proposed study areas for Consultant's use, Consultant shall be responsible for obtaining I-880 & ramp data.

Task 3 – Traffic Volume Forecasts

Prepare traffic volume forecasts for AM and PM peak hour turning movements at the study intersections, ramps and mainline freeway for the southbound I-880 between Oak Street and 23rd Avenue for Year 2025. Forecasts shall be prepared for both "No Project" and "With Project" scenarios using the travel demand model currently available for Alameda County. The forecasts shall be prepared using ABAG Projection 2000 land use data. If necessary, forecasts shall be adjusted to take into consideration the Port of Oakland's recently proposed waterfront "Oak to Ninth District Project" located adjacent to the proposed interchange. The forecasts shall also be prepared to include models with and without "Oak to Ninth District Project". The Oak to Ninth District encompasses a 60-acre site in Oakland located south of Jack London Square immediately adjacent to the Embarcadero and I-880. Traffic forecast activities, including trip distribution and assignment, etc., should be developed in close coordination with the Port of Oakland, the City of Oakland, ACCMA and Caltrans.

Task 4 – Traffic Operations Analysis

The analysis shall focus on the proposed interchange, the two adjacent interchanges at Oak Street and 23rd Avenue and study intersections: (1) Embarcadero/5th Avenue, (2) Embarcadero/I-880 NB 5th Avenue off-ramp, (3) Embarcadero/10th Avenue ramp intersection and up to two new proposed intersections from the waterfront developments. While there are no other project alternatives than the "No Project" and "With Project" scenarios, there are up to three design variations for the ramp intersection as to the location and intersection configuration. ACCMA will provide concept drawings developed through Caltrans Office of Advance Planning.

<u>Intersections</u>

Based on expected traffic volumes and optimal coordinated signal settings, provide forecast delays measured in seconds per vehicle and queue lengths at the intersections during the AM and OM peak hour under both "No Project" and "With Project" with ramp intersection design

variation scenarios. Intersection operations shall be correlated to level of service (LOS) values by applying the A-through-F ranking system presented in the Highway Capacity Manual (HCM).

Ramps and Freeway Segments

Level of Service (LOS) and Volume-to-Capacity (V/C) projections during the AM and PM peak hour under both "No Project and "With Project" scenarios for the on- and off-ramps at 10th Avenue and for mainline freeway segments north and south of the proposed interchange using the Highway Capacity Software (HCS) and SYNCHRO Software (preferred by Caltrans – Office of Signal Operations) are required.

In addition, a discussion of the traffic operation condition at the merge and diverge area of the on-and off-ramp at 10th Avenue, in comparison with the mainline traffic conditions should also be provided.

Adjacent Interchanges

The effect on operations of the adjacent interchanges at Oak Street and 23rd Avenue should be analyzed and discussed for "No Project" and "With Project" scenarios. The "With Project" scenarios shall assume the relocation of the 16th Avenue southbound off-ramp and the extension of the auxiliary lane from Oak Street southbound on-ramp to the new 10th Avenue southbound off-ramp. An estimated percentage of expected changes in traffic volumes at the adjacent interchanges should be provided.

Task 5 – Reports

A draft report documenting the results of the study with conceptual sketches and schematic diagrams with AM and PM peak hour traffic for each study scenarios shall be required. A final report in response to review comments from Caltrans, Port of Oakland, the City of Oakland, ACCMA and other reviewing agencies shall be prepared for final approval by ACCMA.